

Nov. 16, 1948.

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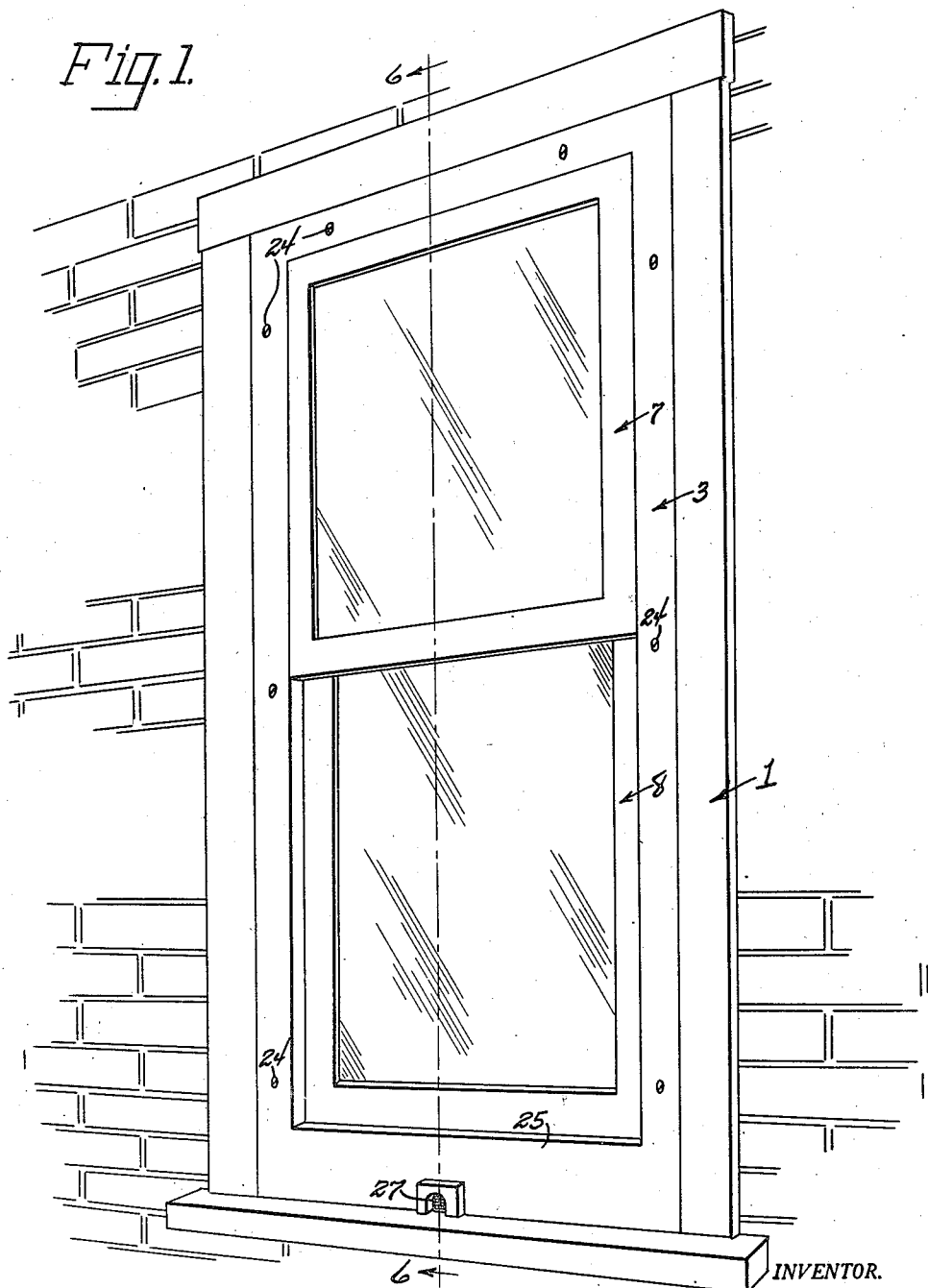
2,453,992

AUXILIARY FRAME AND SASH

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5 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

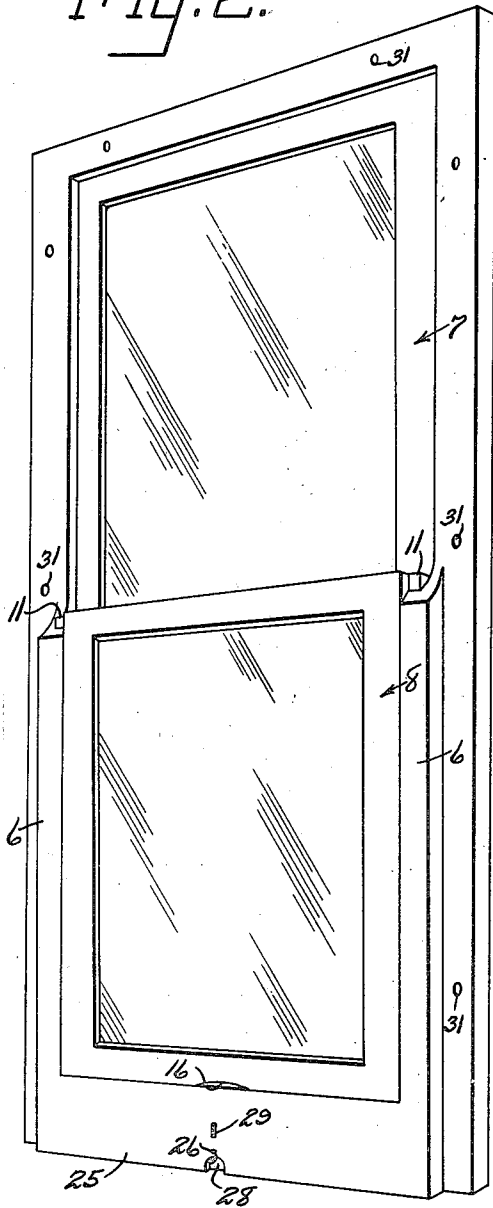
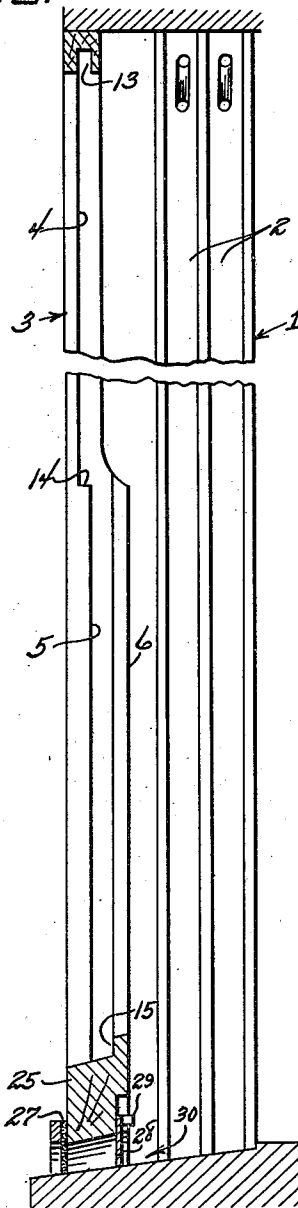


Fig. 6.



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Fig. 3.

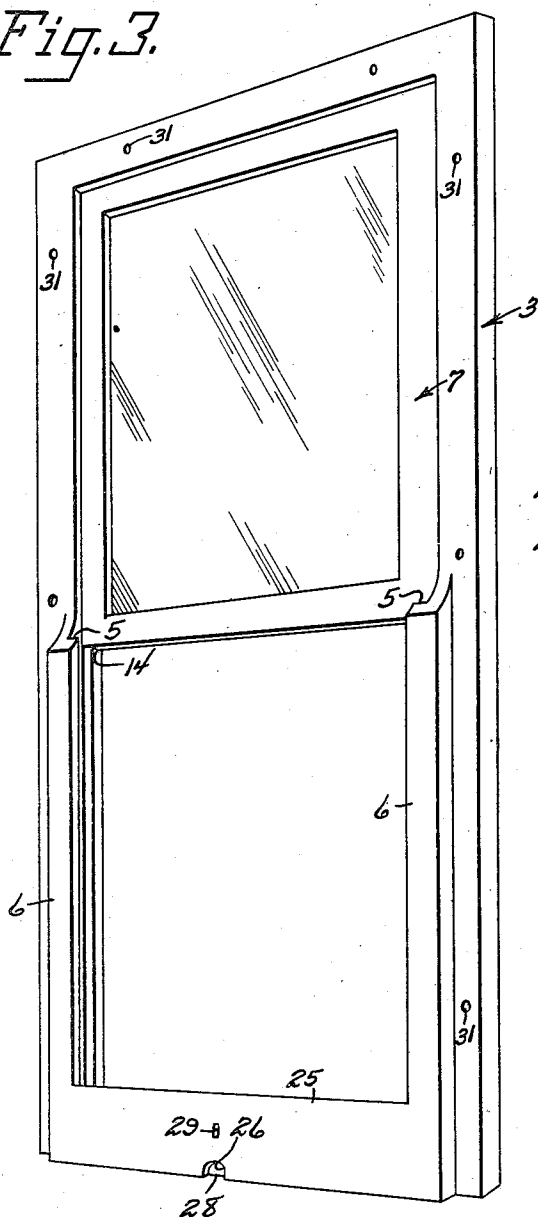
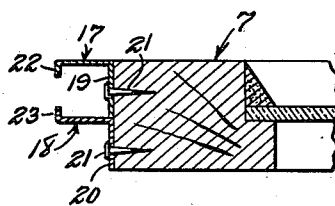


Fig. 8.



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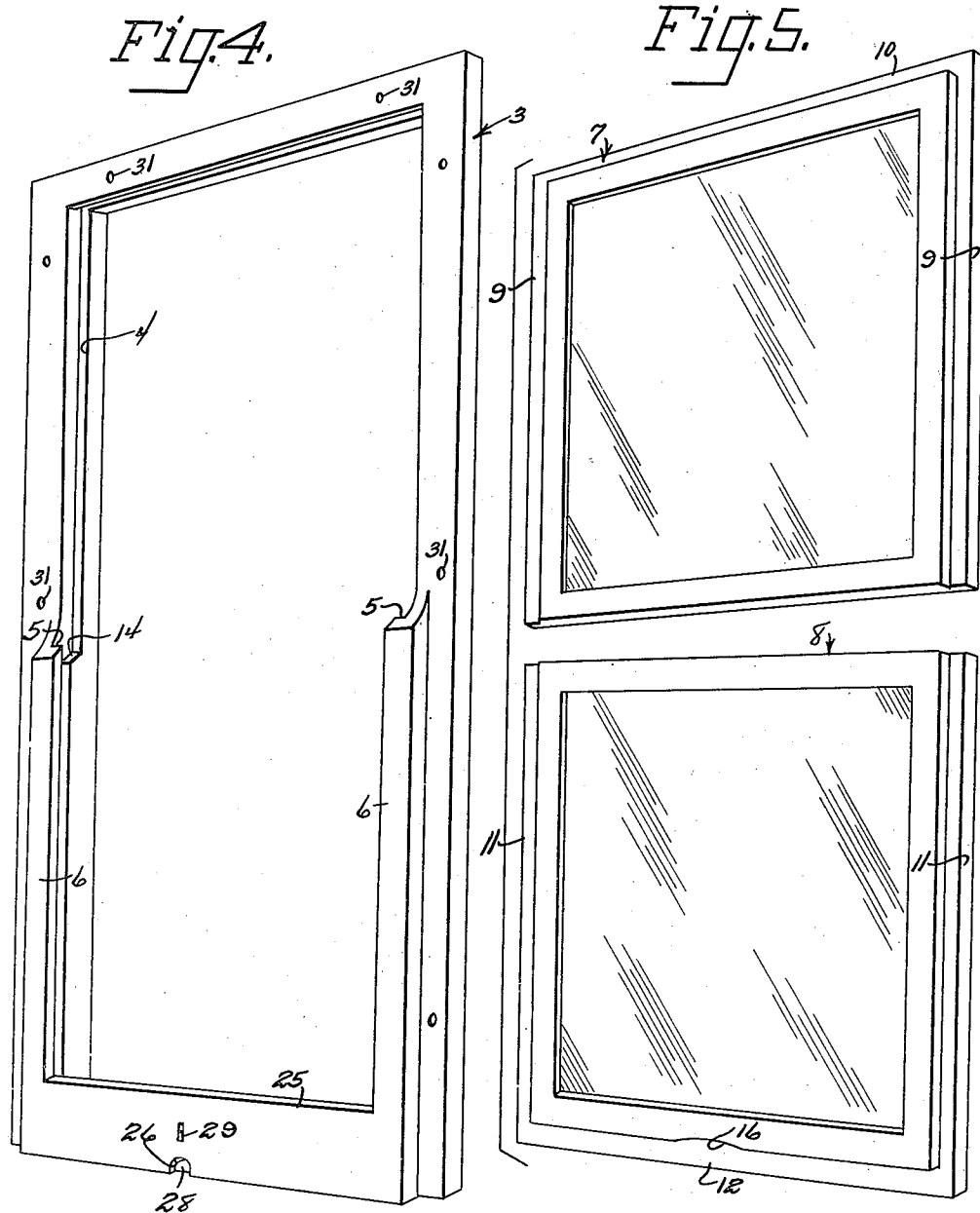
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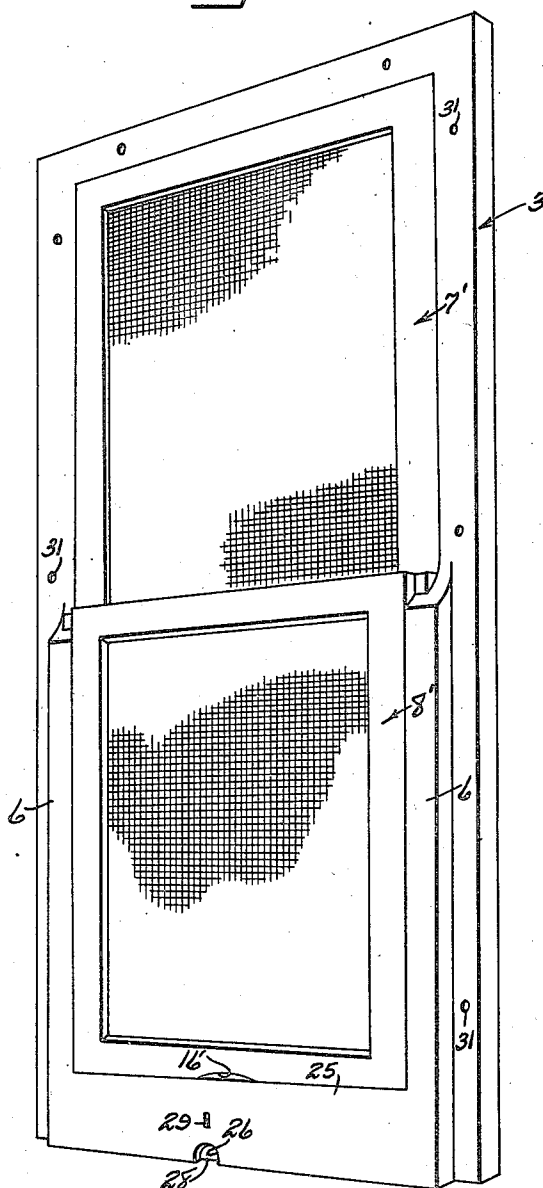
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Fig. 7.



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UNITED STATES PATENT OFFICE

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AUXILIARY FRAME AND SASH

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Application October 20, 1943, Serial No. 507,047

8 Claims. (Cl. 160—182)

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This invention relates to auxiliary frames and sash—such as storm window frames, screen window frames and sash therefor.

One object of this invention is to provide an auxiliary window frame which may be mounted in a regular window frame, which may carry storm or screen sash, and which will not interfere with the manipulation of the regular window sashes.

Another object of this invention is to provide an auxiliary window frame which may interchangeably and removably carry sash of the glass pane type and of the screen wire mesh type thereby causing said frame to interchangeably function as a "storm window" and as a "screen window."

Another object of the invention is to produce an auxiliary window frame which may be attached to the regular window frame by a person working from within a room instead of from the outside, thus eliminating the use of a ladder when attaching said auxiliary frame and/or sash.

Another object of the invention is to so form an auxiliary window frame that the lower sash may be very easily slipped into place or removed without disturbing the upper sash.

Another object of the invention is to so form an auxiliary window frame that the upper sash in its mounted position therein will not interfere with the vertical sliding movement of the lower sash on said auxiliary window frame.

Another object of this invention is to produce a combined auxiliary window frame and sash wherein the lower sash also functions as a latch for the upper sash.

Another object of the invention is to provide an auxiliary window frame and sash which is simple in construction, cheap to manufacture, easy to install or remove, and very strong.

The invention is illustrated in the accompanying drawings wherein:

Figure 1 is a perspective view looking at the outer face of the improved auxiliary window frame and sash and showing the same installed in a regular window frame. The sash is of the window pane type thereby making said unit what is commonly termed a "storm window."

Figure 2 is a perspective view looking at the inner face of the auxiliary window frame and sash shown in Figure 1 but detached from the regular window frame. The auxiliary window frame and sash is shown by itself and not in the regular window frame in order to disclose otherwise hidden parts.

Figure 3 is a perspective view taken similarly

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to Figure 2 of the auxiliary window frame but wherein the lower storm sash has been removed in order to disclose otherwise hidden parts.

Figure 4 is a view of the auxiliary window frame taken similarly to Figure 2 but wherein both storm sashes have been removed in order to disclose otherwise hidden parts.

Figure 5 is a perspective view of the two storm sashes removed from the auxiliary frame.

Figure 6 is a sectional view taken on the line 6—6 of Figure 1 but wherein the sashes have been removed from both the auxiliary window frame and the regular window frame in order to show otherwise hidden parts.

Figure 7 is a perspective view taken similarly to Figure 2 but wherein screen sash have been substituted for the glass pane sash, thereby making said unit what is commonly termed a "screen window."

Figure 8 is a sectional view taken transversely through a side portion of a sash of modified construction.

Referring more particularly to the drawings wherein similar reference numerals denote similar parts, the auxiliary window frame unit shown in Figures 1 to 6 inclusive functions as a storm window and consists of the auxiliary window frame 3, the upper sash 7 and the lower sash 8.

The auxiliary window frame 3 is intended to be fitted into the regular window frame or casement 1 outwardly of the tracks 2 in which the regular sashes of the regular window frame are mounted and is of such dimensions that it fits snugly within the regular window frame opening and close against the regular window frame 1, as shown in Figure 6. The auxiliary window frame 3 may be removably held in place by screws 24 or any other manner desired. The auxiliary window frame 3 has formed therein in each of the sides thereof an upper flange 4 and a lower track 5. Each of said lower tracks 5 is offset inwardly relative to each of said upper flanges 4 and is open at its upper end. The lower portion of the auxiliary window frame 3 is inwardly thickened, as shown at 6, thereby permitting the offset and open upper end structure of said lower tracks 5.

The upper sash 7 is of the window pane type. It is reduced in thickness along its sides and across its upper end to form side beads 9 and a top bead 10. The lower sash 8 is also of the window pane type. It also is reduced in thickness to form side beads 11 and a bead 12 across its lower end. The beads 10 and 12 are of such thickness that they will be readily received within the recesses 13 and 15 respectively. The beads

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11 are of such thickness that they will be received within the lower tracks 5. And the thickness of each of the beads 9 is substantially equal to the depth of each of the shoulders 14. Therefore, when the upper sash is fitted into the upper portion of the auxiliary window frame 3 its upper bead 10 will fit into the groove 13 across the upper end of the frame and its side beads 9 will abut the flanges 4 and rest upon the shoulders 14 at the lower end of each of said flanges 4. In this position the inner surface of the upper sash is flush with the outer side walls of the lower tracks 5. As a result the lower sash may be slid into place with its side beads 11 engaged in the tracks 5 and its lower bead 12 fitting into the recess 15 across the bottom of the auxiliary window frame 3.

The aforesaid arrangement of flanges tracks and sash permits the upper and lower sashes to be readily inserted into and removed from the auxiliary frame 3, permits the lower sash to slide vertically upon said auxiliary frame when the upper sash 7 is mounted in said frame and permits the lower sash 8 to serve as a latch for the upper sash 7.

As shown in Figure 6, the lower arm 25 of the auxiliary frame 3 has the aperture 26 formed therein. This aperture is covered on the outside by wire mesh screen 27. It is normally closed on the inside by a vertically movable gate 28. The gate 28 is provided with a finger piece 29 at its upper end for easy manipulation. The aperture 26 is provided for the purpose of permitting any water which might accumulate in the space 30 between the sash 8' and the regular window sash to run out. Water would tend to accumulate in said space 30 during the summer time when screen sashes 7' and 8' are used.

As is shown in Figures 2 and 5, the lower sash 8 has formed therein a finger receiving recess 16 so that it may be easily grasped and slid upwardly. Similarly the lower sash 8' has the finger receiving recess 16' formed therein for the same purpose.

Instead of forming the beads integral with the sashes 7 and 8 they may be formed as shown in Figure 8. In this embodiment of the invention the beads are formed from metal strips, and each bead consists of companion strips 17 and 18 which are bent to provide attaching flanges 19 and 20 secured against edge faces of the sashes by nails 21. The flanges have a combined width equal to the thickness of the sash to which they are secured and the outer surface of the strip 17 is thus disposed flush with the corresponding surface of the sash. Free side edge portions of the strips are bent inwardly to form flanges 22 and 23 and when the sash is fitted into the frame 3 these flanges provide wide surfaces for bearing against the tracks of the frame and permitting the sashes to be easily shifted vertically in the tracks. The flanges also reinforce the strips and prevent them from being bent by careless handling of the sashes.

To install my novel auxiliary window frame unit within a regular window frame 1 one starts with the auxiliary frame 3 per se shown in Figure 4. Working preferably from the inside of the house, thereby avoiding the use of ladders, one positions said auxiliary frame 3 within the regular frame 1 and attaches said auxiliary window frame 3 to said regular window frame 1 by means of screws 24 or other suitable attaching means. For facilitating this operation I have formed suitable apertures 31 in said auxiliary frame 3 through which said screws 24 or other suitable attaching

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means may be readily extended. After the auxiliary window frame 3 has been attached to the regular window frame 1, one positions the upper sash 7 therein by inserting the top bead 10 within the groove 13 and by pushing said sash 7 outwardly causing same to assume the position shown in Figures 1, 2 and 3 where the inner faces of the side beads 9 contact with the inner faces of the upper flange 4 and where each of the lower ends of said sash 7 rests upon one of the shoulders 14. Thereafter, one positions the lower sash 8 by inserting the lowermost edges of the side beads 11 within the mouth of the said lower tracks 5 and sliding said sash downwardly causing it to assume the position shown in Figures 1 and 2 where the bead 12 is received within the recess 15 and where the upper edge of said lower sash 8 contacts the lower edge of said upper sash 7 and latches said upper sash 7 in place. To unlatch the upper sash 7 one must first remove the lower sash 8 from the auxiliary frame.

In removing the lower sash 8 and upper sash 7 from the window frame either for the purpose of cleaning the panes of glass or for the purpose of substituting screen sash 7' and 8' for the window pane sash 7 and 8, one reverses the steps specified in the foregoing paragraph. One first slides the lower sash 8 upwardly until the lowermost edge of each of the beads 11 is clear of the lower tracks 5. Then one pulls the lower edge of the upper sash 7 inwardly until the outermost face of the upper sash 7 is free of the shoulders 14, and then pulls said sash 7 downwardly, to a point where the top bead 10 is entirely removed from the recess 13. During this operation the beads 9 will enter the lower track 5. After the top bead 10 is free of the recess 13 one pulls the upper end of the sash 7 inwardly to a point where the outer face of the sash 7 is clear of the inner face of the upper portion of the frame 3. At this point the upper sash is slid upwardly until the lowermost edges of the beads 9 are free of the lower tracks 5, at which point the sash 7 is free of the frame. Except for the fact that wire screen mesh is substituted for the glass pane, the upper screen sash 7' is exactly the same in structure as the sash 7 and the lower screen sash 8' is exactly the same in structure as the lower window pane sash 8. Therefore, in inserting and removing the screen sash 7' and 8', one follows exactly the same procedure that was pursued in the insertion of the window pane sash 7 and 8.

Definitions

The term "auxiliary window frame unit" as used in the claims and specifications is to be interpreted to mean a unit consisting of an auxiliary window frame, such as the element 3, and sash carried thereby. The sash in the unit may be either sash of the glass pane type, such as the elements 7 and 8, or sash of the wire mesh screen type, such as the elements 7' and 8'.

The term "storm window" as used in the claims and specifications is to be interpreted to mean a window frame unit, such as is shown in Figures 1 and 2, comprising an auxiliary window frame, such as the element 1, and sash of the window pane type, such as the elements 7 and 8.

The term "screen window" as used in the claims and specifications is to be interpreted to mean an auxiliary window frame, such as is shown in Figure 7, comprising an auxiliary window frame, such as the element 3, and sash of the wire mesh screen type, such as the elements 7' and 8'.

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The term "regular window frame" as used in the claims and specifications is to be interpreted to mean the window frame which is normally and originally built as part of the house or building, such as the window frame 1 shown in Figures 1 and 6. The word "regular" appearing in this phrase is not to be interpreted as meaning a standard size since the term "regular window frame" is to be interpreted to mean any size and type of window frame which may be used in a house or building, irrespective of its size and irrespective of whether it is of a standard type.

Having thus described the invention, what is claimed is:

1. An auxiliary window frame unit comprising an auxiliary window frame of dimensions adapting it to fit a window frame, said auxiliary window frame having upper flanges and lower tracks along its sides and recesses across its upper and lower ends, the lower tracks being rearwardly offset with respect to the upper flanges and open at their upper ends, the upper flanges having shoulders at their lower ends, an upper sash fitting in the upper portion of said auxiliary window frame and having beads along its sides abutting the upper flanges and resting upon said shoulders, and a lower sash in the lower portion of said auxiliary window frame having beads along its sides engaged in the lower tracks and slidably mounting the lower sash for vertical shifting in said auxiliary window frame.

2. An auxiliary frame unit comprising an auxiliary window frame for fitting a window frame, said auxiliary window frame having its upper portion formed with side flanges having shoulders at their lower ends and a recess across its upper end between upper ends of the side flanges, the lower portion of said auxiliary window frame being rearwardly thickened and formed along its sides with lower tracks offset rearwardly from the side flanges and open at their upper ends, there being a recess across the lower end of said auxiliary window frame between lower ends of the lower tracks, an upper sash fitted into said auxiliary window frame and a bead across its upper end engaged in the upper recess and side beads engaged in the side flanges and resting upon said shoulders, and a lower sash fitting within said auxiliary window frame and having a bead across its lower end engaged in the lower recess and beads along its sides engaged in the lower tracks and mounting the lower sash for vertical sliding movement from a lowered closed position upwardly to an opened position.

3. In a window structure, an auxiliary window frame unit having upper flanges and lower tracks along its sides, upper and lower sashes in said auxiliary window frame having beads abutting said flanges and engaging in said tracks, said beads each consisting of strips spaced transversely from each other and bent to form attaching flanges secured against an edge face of the sash, free side edge portions of said strips being bent to form flanges for reinforcing the strips and providing wide flange abutting and track-engaging surfaces.

4. An auxiliary storm window of dimensions adapting it for fitting a regular window frame, said auxiliary storm window having its upper portion formed with side flanges having shoulders at their lower ends and a recess across its upper end between upper ends of the upper flanges, the lower portion of said auxiliary window frame being rearwardly thickened and formed along its sides with lower tracks offset rearwardly from the

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upper tracks and open at their upper ends, there being a recess across the lower end of said auxiliary window frame between lower ends of the lower tracks, an upper storm sash fitted into said auxiliary window frame and a bead across its upper end engaged in the upper recess and side beads abutting the side flanges and resting upon said shoulders, and a lower storm sash fitting within said auxiliary window frame and having a bead across its lower end engaged in the lower recess and beads along its sides engaged in the lower tracks and mounting lower sash for vertical sliding movement from a lowered closed position upwardly to an opened position.

5. An auxiliary screen window frame of dimensions adapting it for fitting a regular window frame, said auxiliary screen window frame having its upper portion formed with side flanges having shoulders at their lower ends and a recess across its upper end between upper ends of the upper flanges, the lower portion of said auxiliary window frame being rearwardly thickened and formed along its sides with lower tracks offset rearwardly from the upper flanges and open at their upper ends, there being a recess across the lower end of said auxiliary window frame between lower ends of the lower tracks, an upper screen sash fitted into said auxiliary window frame and a bead across its upper end engaged in the upper recess and side beads abutting the side flanges and resting upon said shoulders, and a lower screen sash fitting within said auxiliary window frame and having a bead across its lower end engaged in the lower recess and beads along its sides engaged in the lower tracks and mounting the lower sash for vertical sliding movement from a lowered closed position upwardly to an opened position.

6. An auxiliary screen window frame of dimensions adapting it for fitting a regular window screen, said auxiliary screen window comprising an auxiliary window frame having upper flanges and lower tracks along its sides, the upper flanges having shoulders at their lower ends and the lower tracks being offset rearwardly from the upper flanges and open at their upper ends, an upper screen sash in said auxiliary window frame positioned against the upper flanges and resting upon said shoulders, and a lower screen sash in said auxiliary window frame slidably engaged in the lower tracks for vertical shifting movement to opened and closed positions and when raised being removable through upper ends of the lower tracks.

7. In a window structure, an auxiliary screen window comprising an auxiliary window frame having upper flanges and lower tracks offset with respect to the upper flanges and open at their upper ends, and upper screen sash fitting within the said auxiliary window frame and abutting the upper flanges, and a lower screen sash fitting within said auxiliary window frame and slidably engaged in the lower tracks for vertical shifting from a lowered position to a raised position.

8. In a window structure, an auxiliary screen window comprising an auxiliary window frame having upper flanges and lower tracks along its sides, an upper screen sash in said auxiliary window frame abutting the upper flanges, and a lower screen sash in said auxiliary window frame engaged in the lower tracks and slidable vertically therein to raised and lowered positions.

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